

**SAMPLE DOCUMENTATION
PRODUCTION OF DAIRY PRODUCTS IN FOOD SERVICE
ESTABLISHMENTS**



Ministry of Health

Important

Frozen Dairy Desserts: Ice cream, Gelato, Sherbet, Kulfi

The Guidelines for the Production of Dairy Foods in Food Service Establishments Website is intended for restaurant stakeholders (owners, managers, chefs and kitchen staff) and environmental health officers (EHOs) inspecting food premises where dairy products are being made for immediate consumption, according to the British Columbia Milk Industry Act, Dairy Plant Exception Regulation (BC Reg. 224/2019) https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/224_2019.

Section 2 of the DPER provides a specific exemption to a food premises that is using a freezing device to make frozen dairy products from a commercially prepared mix (e.g. ice cream mix, milkshake mix, “powdered” ice cream or soft serve mix). The addition of additional dairy ingredients is not contemplated in the intent of this section.

Minimal processing such as rehydrating the powdered mix (i.e. addition of water), and the addition of lower risk flavourings and inclusions added before or after freezing into molds or containers would be considered allowable under this section.

Food premises that do not meet the requirements of the DPER would be regulated as a dairy plant under the BC Milk Industry Act. Please visit the BC Centre For Disease Control web page for more information at:

<http://www.bccdc.ca/health-professionals/professional-resources/dairy-plant-licensing-inspection#Licensing>

Production of Kulfi in Food Service Establishment

Kulfi is an Indian ice cream . The traditional recipe is made by evaporation of milk to achieve the high solids required for good frozen texture. Additional milk solids are added to thickened milk. This long cook step provides the caramelized cream flavour. There is no air incorporation during the freezing step. Traditional flavours include saffron, cardamom and rosewater and the addition of nuts. The product may be scooped from a container but is usually made in molds with a stick for easy handling.



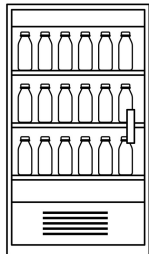
STANDARD RECIPE

5 L milk (3.5 %BF)
 1 Kg khoya (can use skim milk powder)
 500 g sugar
 Pistachio powder, cardamom powder, saffron

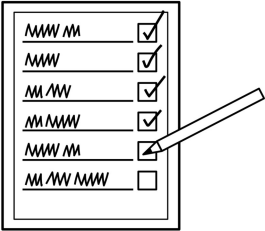

Equipment List

Thick bottom saucepan (Kadhai)	Scale	Spoon	Whisk
Thermometer	Blender	Kulfi molds	

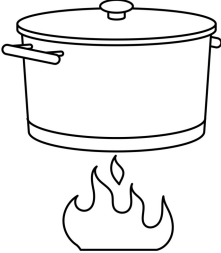
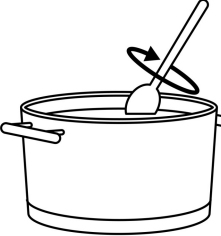
PROCESS BASED FOOD SAFETY PLAN

Step #	Process Step	Potential Hazards	Instructions and Outcomes
1	Purchase and refrigerate milk 	<p><u>Biological</u></p> <p>Pathogen contamination due to using product that is past best before date.</p> <p>Pathogen growth due to time/temperature abuse.</p> <p>Pathogen contamination due to condensation falling onto/into uncovered product.</p>	<ul style="list-style-type: none"> Purchase and use only pasteurized dairy ingredients from approved sources. Keep pasteurized dairy ingredients in original commercial packaging, as purchased, until use. If using internal source of khoya in this product make sure it is fresh and no more than 3 days old. Store at 4°C or colder. <p style="text-align: center;">Do not use products where the best before date has expired.</p>

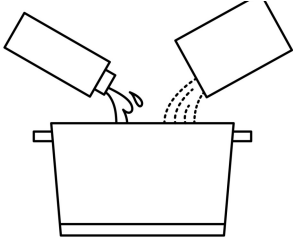
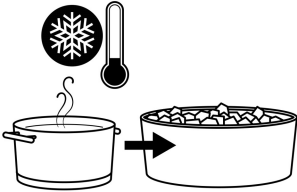
PROCESS BASED FOOD SAFETY PLAN

Step #	Process Step	Potential Hazards	Instructions and Outcomes
2	<p>Preoperational Checks</p> 	<p><u>Biological</u> Pathogen contamination due to incomplete sanitation procedures.</p> <p><u>Chemical</u> Cross contamination due to improper separation of activities. Contamination with non-food chemicals due to residual cleaners or sanitizers. Contamination with non-food chemicals due to mishandling of sanitizer spray bottles during use or filling.</p>	<ul style="list-style-type: none"> • Inspect, clean and sanitize designated work area. • Inspect equipment, utensils, and processing areas (clean and sanitized). • Use written recipe each time you make the product to ensure consistency of measurements and that all steps in the production process are followed. • Label the sanitizer spray bottles to indicate the content (non-food chemical)
3	<p>Stage Ingredients</p> 	<p><u>Biological</u> Pathogen growth due to time/temperature abuse. Pathogen contamination due to unsanitary equipment. Pathogen cross-contamination due to improper employee handling practices.</p> <p><u>Chemical</u> Contamination with non-food chemicals due to residual cleaners or sanitizers.</p> <p><u>Allergens</u> Allergen cross contamination due to improper separation of activities.</p>	<ul style="list-style-type: none"> • Kulfi flavourings include sweet, salted and masala (spice). • Ensure nuts, herbs, fruit and other added ingredients are purchased from an approved supplier. • Flavour preparations may be a source of contamination (B,C,P). <ol style="list-style-type: none"> 1. Spices may require roasting and crushing prior to use, e.g. green cardamon pods are crushed lightly using a mortar and pestle. Remove the husks (P) and crush the seeds to a fine powder. 2. Nuts such as pistachios are ground to powder before addition to milk mixture. Control nut allergen cross contamination between nut ingredients (e.g. cashews, pistachios and almonds.) Clean area and utensils following four step sanitation procedure between nut containing products. • Add using sanitized supplementary utensils

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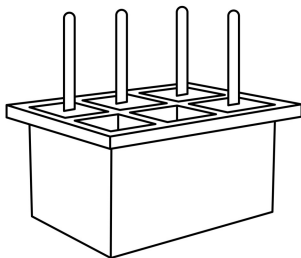
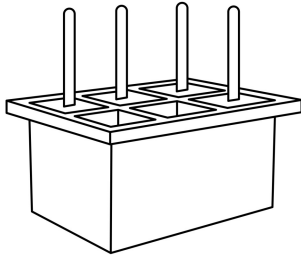
Step #	Process Step	Potential Hazards	Instructions and Outcomes
4	Heat Milk 	<p><u>Biological</u> Pathogen growth due to time/temperature abuse (too slow heating rate, incorrectly calibrated thermometer).</p> <p><u>Chemical</u> Contamination with non-food chemicals due to residual cleaners or sanitizers. Contamination with non-food chemicals due to incomplete sanitation procedures.</p> <p><u>Allergens</u> Contamination by allergens due to improper separation of activities.</p> <p><u>Physical</u> Hazardous extraneous material contamination due to poor hygiene and improper handling by employees.</p>	<ul style="list-style-type: none"> • Pour milk into a thick bottomed pan and start heating process. A Kadai is traditionally used for this. • Bring milk to a gentle boil on low to medium heat. A gentle boil will have bubbles of milk around the edge of the pot. • Flavour preparations such as cardamom powder and saffron may be added at this step.
5	Cook and hold long time (stir constantly) 	<p><u>Biological</u> Pathogen growth due to time/temperature abuse (too slow heating rate, incorrectly calibrated thermometer). Pathogen growth due to poor hygiene and improper handling by employees. Pathogen contamination due to unsanitary equipment.</p>	<ul style="list-style-type: none"> • Continue to simmer (82-85°C) milk over low heat until it reduces to half the original volume. Too high a temperature will cause browning and burning to bottom of pot. • The temperature must remain above above 60°C.

PROCESS BASED FOOD SAFETY PLAN



Step #	Process Step	Potential Hazards	Instructions and Outcomes
6	<p>Add sweetener, khoya or other milk solids, and flavour</p> 	<p><u>Biological</u></p> <p>Pathogen contamination due to poor hygiene and improper handling by employees.</p> <p>Pathogen contamination due to using flavouring ingredient that is contaminated (past code date, staged in a unhygienic manner).</p> <p>Pathogen contamination due to unsanitary equipment.</p> <p><u>Allergens</u></p> <p>Allergen cross contamination due to improper separation of activities.</p> <p>Contamination by allergens due to unsanitary equipment.</p> <p>Allergen cross contamination due to improper employee handling practices.</p> <p><u>Physical</u></p> <p>Hazardous extraneous material contamination due to poorly prepared (staged) flavouring ingredient (pits, nut shells, packaging)</p>	<ul style="list-style-type: none"> • Blend khoya into thickened milk. After it is dissolved add sugar and flavour preparations. . • Stir to dissolve. Maintain temperature. • Add using sanitized supplementary utensils • Ensure milk solids and flavouring ingredients are within code. Use FIFO inventory control.
7	<p>Cool</p> 	<p><u>Biological</u></p> <p>Pathogen contamination due to poor hygiene and improper handling by employees.</p> <p>Pathogen contamination due to unsanitary equipment.</p> <p>Pathogen growth due to time/temperature abuse (too slow cooling rate, incorrectly calibrated thermometer).</p> <p><u>Chemical</u></p> <p>Contamination with non-food chemicals due to residual cleaners or sanitizers.</p>	<p>CRITICAL CONTROL POINT (CCP1B)</p> <ul style="list-style-type: none"> • Cool to 4°C. Use an ice bath or water in sink to remove initial heat. • Ensure proper cooling rate: Cool down to 20°C within 2 hours, and 20°C to 4°C within 4 hours. Total cooling time not to exceed 6 hours. • It is permissible to fill kulfi molds with mix when 20°C if the molds will be transferred to freezer immediately.

PROCESS BASED FOOD SAFETY PLAN

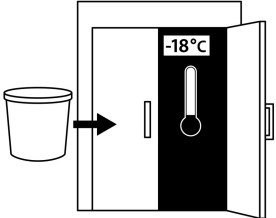
Step #	Process Step	Potential Hazards	Instructions and Outcomes
10	Pour into mold	<p><u>Biological</u> Pathogen growth due to time/temperature abuse.</p> <p>Pathogen contamination due to use of non food grade, damaged or unclean containers (new or used).</p> <p>Pathogen contamination due to poor hygiene and improper handling by employees.</p> <p><u>Chemical</u> Contamination with non-food chemicals due to use of non food grade packaging material</p> <p><u>Allergens</u> Allergen cross contamination due to unsanitary equipment.</p> <p><u>Physical</u> Hazardous extraneous material contamination due to dirt and debris falling into uncovered product.</p>	<ul style="list-style-type: none"> • Wash hands before this step. Wear gloves. • Use clean spoon/ladle to transfer the Kulfi mix into the molds. Mix can also be transferred to a pitcher that would enable pouring into mold. • Use separate utensils for allergen containing flavoured Kulfi. Allergen cross contamination must be considered • Cover and place in freezer.
11	Freeze	<p><u>Biological</u> Pathogen contamination due to unsanitary equipment.</p> <p>Pathogen contamination due to poor hygiene and improper handling by employees.</p> <p><u>Allergens</u> Allergen cross contamination due to improper production scheduling.</p>	<ul style="list-style-type: none"> • Kulfi is frozen without air incorporation. • Transfer molds to freezer. • When partially solidified place single use sticks upright in the mold.



PROCESS BASED FOOD SAFETY PLAN

Step #	Process Step	Potential Hazards	Instructions and Outcomes
12	Remove from mold 	<p><u>Biological</u> Pathogen contamination due to poor hygiene and improper handling by employees. Pathogen contamination due to contaminated water used to loosen from mold</p> <p><u>Allergens</u> Allergen cross contamination due to improper separation of activities.</p>	<ul style="list-style-type: none"> • Wash hands before this step. Wear gloves. • Place mold into pan of warm water to loosen it from edges. Water can be running but be careful not to splash onto product.
13	Package 	<p><u>Biological</u> Pathogen growth due to time/temperature abuse due to taking too long to complete step Pathogen cross-contamination due to poor hygiene and improper handling by employees. Pathogen contamination due to condensation falling onto/into uncovered product. Pathogen contamination due to improperly stored packaging material.</p> <p><u>Allergens</u> Allergen cross contamination due to improperly stored packaging material.</p> <p><u>Physical</u> Hazardous extraneous material contamination due to damaged or open packaging.</p>	<ul style="list-style-type: none"> • Wash hands before this step. Wear gloves. • Wrap Kulfi in single use paper sleeve. Place in storage tub. Cover and return to freezer as quickly as possible

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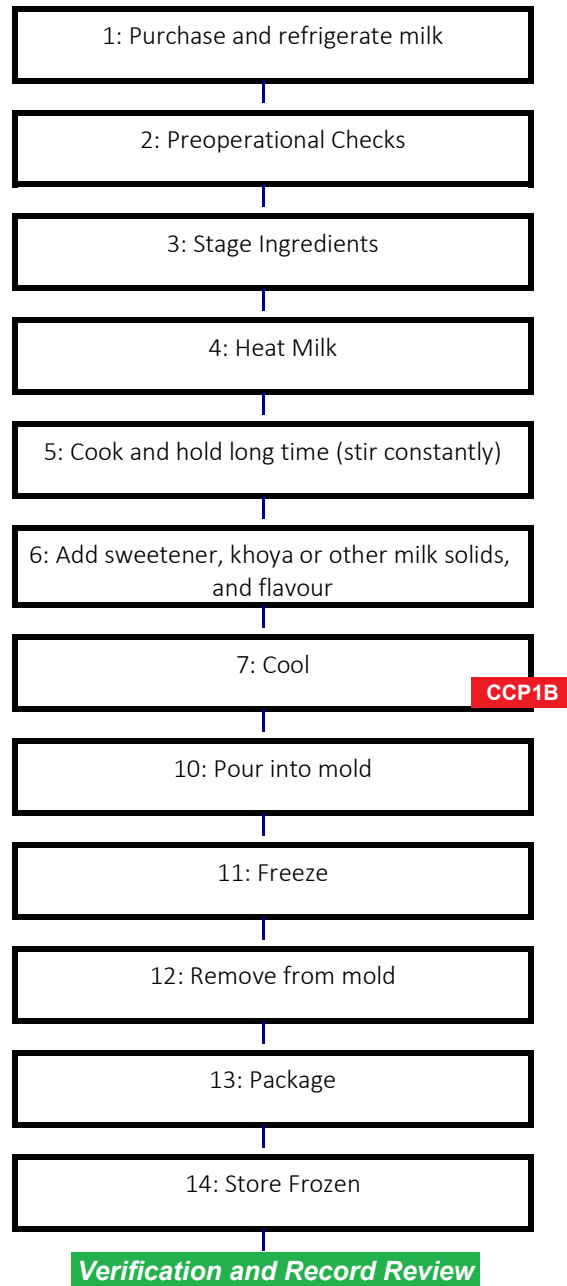
Step #	Process Step	Potential Hazards	Instructions and Outcomes
14	Store Frozen 	Biological Pathogen contamination due to condensation falling onto/into uncovered product. Pathogen growth due to inadequate freezing (e.g. time/temperature abuse, improper air flow, space between packages, stacking procedure).	<ul style="list-style-type: none">• Date code product before transferring to freezer.• Ensure rapid freezing for control of ice crystal formation

Product Description Form (Foodservice)

Product Category	Frozen Dairy Desserts
1. What is your product name and weight/volume?	Kulfi
2. What type of product is it (e.g. raw, ready-to-eat, ready-to-cook, or ready for further processing)	Ready to Eat (RTE).
3. What are your product's important food safety characteristics (e.g. acidity, water activity, salinity, etc.)?	Evaporation, frozen.
4. What allergens does your product contain?	Milk. A variety of flavouring ingredients are used including cardamon, saffron, mango, nuts such as pistachio and almond. May be
5. What restricted ingredients (preservatives, additives, etc.) does your product contain, and in what amounts e.g. grams)	None
6. How do you store your product e.g. keep refrigerated, keep frozen, keep dry) in your establishment and when you ship your product?	Stored and distributed at frozen temperature (<-18°C).
7. What is the shelflife of your product under proper storage conditions?	2 to 3 months in freezer (<-18°C)
8. Who will consume your product (e.g. the general public, the elderly, the immunocompromised, infants?)	Food Service customers.
9. How might the consumer mishandle your product and what safety measures will prevent this?	Mishandled in kitchen.
10. Where will the product be sold?	At own facility.
11. What information is on your product label?	Keep frozen, production date (lot code).

Kulfi

Process Flow Table



Critical Control Points Table: Kulfi

1. Identifying Hazards	2. Identifying Critical Control Points (CCP)	3. Establishing Critical Limits:	4. Establishing Monitoring Procedures (who, what, how and when)	5. Establishing Corrective Actions:	6. Establishing Verification Procedures (who, what, how and when)	7. Keeping Records
Pathogen growth due to improper cooling procedures	CCP1B Cool	Cool down to 20 °C within 2 hours and from 20 to 4 °C within 4 hours. Total cooling time not to exceed 6 hours.	<ol style="list-style-type: none"> 1. Production worker checks temperature with clean and sanitized probe thermometer. 2. Check temperature every hour until 4 °C is reached. 3. Record on batch report 	<p>When critical limits are not being met for one or more product samples.</p> <ol style="list-style-type: none"> 1. Report slow cooling to Operator. Check cooler and determine if maintenance is required. 2. Place product on hold. Discard Kulfi if time limit has not been met. 3. Immediately investigate the cause of the non-conformance and take necessary corrective actions to prevent reoccurrence. 4. Record all non-conformances and corrective actions on batch report. 	<ol style="list-style-type: none"> 1. Operator reviews and signs batch reports at end of production day to ensure that it has been properly completed. 2. Once per week, the Operator ensures that the temperature checks follow the procedure (observes production worker in their task). 3. Operator reviews and signs cooler temperature once per week. 4. If a non-conformance is found during the verification procedure, immediately investigate the cause of the non-conformance and take necessary corrective actions to prevent reoccurrence. 5. Record all observations on the batch report, including the date, the time and initials. 	<ul style="list-style-type: none"> Kulfi Batch Report Cooler Temperature Log Thermometer Calibration Log

Note: CCPs are points in the your process where controls are essential to preventing hazards or reducing them to acceptable levels. You may not be able to prevent or reduce the risk of the hazard at any later step. A CCP is measureable. Some examples of measureable CCPS in dairy processing are the time and temperature of pasteurization, the pH of a fermented dairy product and the water activity of a dried product such as skim milk powder. Foodservice establishments may include additional preparation steps as CCPs particularly when there is no cook step in the operation. These additional CCPs control the hazards associated with crosscontamination due to sanitation and personnel.

Kulfi Batch Report

Date Made: 2022-Mar-03
Lot Code: 22062
Operator: Joe

Preoperational checks done Yes, JG
Desired Batch Size (Kg)

3.5

Ingredients Used

Ingredient	Amount	Code/Lot	Supplier
Milk (3.25% BF)	2 L	MR 24	Saputo
Khoya	1000 G	22060	Internal
Sugar	500 G	21232	Lantic
Ground pistachio	150 G	23 JA 09	snowcap
Cardamom	10 G	21258	Pacific Blends
Saffron	10 threads	21295	Pacific Blends

Process Step	Time Start	Temp (°C)	Comments
Heat Milk	8:00	70	
	8:10	82	
	8:30	88	
	9:15	85	volume reduced by half.
Add ingredients	9:30	83	
	9:45	83	
CCP1B Start cool in ice bath	8:45	82	
Cool end	9:30	4	

Number of molds filled: 18

Observed Deviations and Corrective Actions

Verification by:
Mary Smith

Date of Record Review:
2022-Mar-08